Title: GLP-1 EXENDIN-4 PEPTIDE ANALOGS AND USES THEREOF

Abstract: The invention relates to novel polypeptide analogues of GLP-1 and exendin-4. The polypeptide, in a preferred embodiment, is insulinoergic and long-acting. Preferably, the polypeptide's insulinoergic effect is comparable to or exceeds the effect of an equimolar amount of GLP-1 or exendin-4. The invention also relates to a method of treating a subject with diabetes, comprising administering to the subject the polypeptide of the invention in an amount that has an insulinoergic effect. The invention also relates to methods of using GLP-1, exendin-4, and polypeptide analogues thereof for neuroprotective and neurotrophic effects.
**INTERNATIONAL SEARCH REPORT**

A. **CLASSIFICATION OF SUBJECT MATTER**
   - IPC(7) : A61K 38/10, 38/16; C07K 7/00, 14/00
   - US CL : 514/ 12, 13, 14, 15; 530/308, 324, 325, 326, 327
   - According to International Patent Classification (IPC) or to both national classification and IPC

B. **FIELDS SEARCHED**
   - Minimum documentation searched (classification system followed by classification symbols)
     - U.S. : 514/ 12, 13, 14, 15; 530/308, 324, 325, 326, 327

   - Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

   - Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
     - Please See Continuation Sheet

C. **DOCUMENTS CONSIDERED TO BE RELEVANT**

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>X</td>
<td>WO 2000016797 A2 (ELI LILLY AND COMPANY) 30 March 2000 (30.03.2000), see entire document, especially pages 6-15.</td>
<td>73-81</td>
</tr>
<tr>
<td>A</td>
<td>US 6,429,197 A (COOLIDGE et al) 06 August 2002 (06.08.02), see entire document.</td>
<td>70-90</td>
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<td>X</td>
<td>WO 99/40788 A1 (AMYLIN PHARMACEUTICALS, INC.) 19 August 1999 (30.03.00), see entire document, especially pages 16-19.</td>
<td>11-14, 49-70</td>
</tr>
<tr>
<td>X</td>
<td>WO 98/30231 A1 (AMYLIN PHARMACEUTICALS, INC.) 17 July 1998 (16.07.98), see entire document, especially pages 16-25.</td>
<td>11-14, 45-60</td>
</tr>
</tbody>
</table>

* Further documents are listed in the continuation of Box C.

Date of the actual completion of the international search: 11 August 2003 (11.08.2003)

Date of mailing of the international search report: 25 Nov 2003

Authorized officer: Amrit Gupta

Telephone No.: 703-308-0196

Form PCT/ISA/210 (second sheet) (July 1998)
Continuation of B. FIELDS SEARCHED Item 3:
CAPLUS, EMBASE, WPIDS, EAST
sequence search, glucagon, exendin, diabetes, neurological disorder, neurons